AMSAT News Service Weekly Bulletins
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SB SAT @ AMSAT $ANS-135.01
ARSENE LAUNCH A SUCCESS

HR AMSAT NEWS SERVICE BULLETIN 135.01 FROM AMSAT HQ
SILVER SPRING, MD MAY 15, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-135.01

ARSENE Successfully Launched 12-MAY-93 At 00:56 UTC

After a nominal launch from the Kourou, French Guiana spaceport on 12-MAY-1993 at 00:56 UTC, a new satellite has joined a proud family of satellites serving the amateur radio community. After some initial dificulties in establishing command of ARSENE after launch, a Paris ground command station did successfully command the Mode-S transmitter on late Thursday, 13-MAY-93, and started the flow of spacecraft telemetry from ARSENE. The capture of this telemetry is a very important step inorder to ensure that all of ARSENE's subsystems are performing nominally in preparation for the firing of the ARSENE rocket motor. Once the telemetry has been analyzed, ground controllers will issue the command for ARSENE to fire its "apogee-kick-motor" inorder to raise its dangerously low perigee to a considerably higher and safer altitude. The current "geostationary transfer orbit" is about 205 KM by 36,000 KM in altitude. After the first motor firing, ground controllers will study ARSENE's telemetry and then later fire the motor for a second time to achieve an orbit of 20,000 KM by 36,000 KM.

At the time that this AMSAT News Service (ANS) bulletin was written, there was no further news of the status of the ARSENE motor firing. Please stay tuned to the various AMSAT HF and VHF nets for more information about ARSENE in the upcoming week.

[The AMSAT News Service (ANS) would like to thank G0SUL (formerly G0/K8KA) of the University of Surrey and LW2DTZ of AMSAT-Argentina for the inform-ation which went into this bulletin item.]

/EX
SB SAT @ AMSAT $ANS-135.02
SAREX SUMMARY: PART I

HR AMSAT NEWS SERVICE BULLETIN 135.02 FROM AMSAT HQ
SILVER SPRING, MD MAY 15, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-135.03

KA3HDO Discusses The Issue Of SAREX General QSO Ops On STS-55 and STS-56

The SAREX Working Group has received several inquiries regarding the low number of general QSO contacts made during the STS-56 and the STS-55 SAREX missions. Because of these concerns, I felt it necessary to respond to this issue so that you are not left in the dark.

The Working Group, consisting of the ARRL, AMSAT, and the JSC ARC, was initially caught by surprise at the low number of general QSO contacts during these missions. We understand your concerns; however, it is very important that we all put the activities of these past two SAREX missions into perspective.

Please remember that SAREX is a SECONDARY payload. During both these

missions, the shuttle crews were working various payload issues. For example, the shuttle crew on STS-56 was very busy working primary payload issues; particularly a high data-rate communications problem between the shuttle and the TDRSS and an Electro-Magnetic Interference (EMI) problem on the flight deck. Moreover, power conservation was a main concern on STS-55 in an effort to extend the mission for the PRIMARY payload. Remember that when a problem or issue arises, SAREX will get a "back seat".
I have stated before that "The primary goal of SAREX is to spark student's interest in the science, technology, and communications fields by allowing them to talk to Space Shuttle astronauts using amateur radio." (See article entitled "SAREX Hardware Configurations and Flight Operations Support" in the September/October 1992 issue of the AMSAT Journal). Remember, our prime sponsor of this activity is NASA's Office of Education. Moreover, I wrote in the article "As time permits, members of the SAREX flight crew will make random QSO contacts with hams on the ground." We cannot and should not guarantee a large quantity of random QSOs with the crew on any specific Shuttle mission. This is asking too much from the SAREX Working Group and NASA.

As I stated in the above mentioned article, SAREX is a multifaceted program which includes student education (prime goal), ham radio DXing, technical experimentation and crew-family contacts. You are aware from your own experiences that as you do more, you tend to focus less on one specific activity. As such, when SAREX flys all the operating modes (Voice, packet, SSTV and ATV-uplink) -- as was the case on STS-56 -- there is less time to do one specific mode. Please keep this mind in the future.

Packet radio operations are primarily performed when the Shuttle crew is busy with the primary or other secondary payloads. Because of the EMI issues on the flight deck and also the operations of other SAREX modes (school groups, ATV, etc.), the packet robot was only on 10-15% during the STS-56 mission. In addition , the critical power conservation measures on STS-55 resulted in the shutdown of the SAREX robot for more than half of this mission. Once we were given permission to turn on the packet robot, the SAREX antenna connector failed. Within 36 hours, the SAREX team requested and got permission from NASA to move the packet system into the German spacelab module and use the SAFEX shuttle bay-mounted antenna. This was quite a feat because we had to prove to NASA that flight safety would not be compromised if the system was left in the spacelab module during a real emergency. (Remember, during landing, the Shuttle flies like a glider and weight and balance is critical to ensure flight safety). Although the packet robot was on for a small percentage of these missions, over 300 international packet QSOs were accumulated on each mission.

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SB SAT @ AMSAT $ANS-135.03
SAREX SUMMARY: PART II

HR AMSAT NEWS SERVICE BULLETIN 135.03 FROM AMSAT HQ
SILVER SPRING, MD MAY 15, 1993
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KA3HDO Discusses The Issue Of SAREX General QSO Ops On STS-55 and STS-56

From a mutifaceted standpoint, the STS-56 and STS-55 SAREX flights were a resounding success. The SAREX Working Group is quite proud of the accomplishments of the crew and the SAREX support team for all their efforts. In particular, we had an improvement in the success rate of the school groups on these missions as compared to past missions. All the schools had good station setups and all but a small few made outstanding horizon-to-horizon contacts on their first attempt. This success rate was largely the result of the AMSAT technical support team that was developed to improve the

school success rate. STS-56 Commander Ken Cameron surprised the Cap Com in Houston when he reported that he could see them from the Orbiter (via the ATV uplink). In addition, the first confirmed ship-to-ship contact between the Space Shuttle and MIR occurred on STS-56 on April 10, 1993 at a Mission Elapse Time (MET) of 2 days, 17 hours and 32 minutes. Mike Foale, KB5UAC, was the Space Shuttle crew member at the microphone to accomplish this historic first. This was followed up by a 1 minute 45 second conversation with the MIR crew from the Space Shuttle Columbia on STS-55 using the externally mounted SAFEX antenna. On STS-55, hams and students in the southeastern U.S. participated in a highly successful A/B antenna test using the SAREX window mounted antenna for one orbit and the externally mounted SAFEX 2M antenna on the next orbit.

The SAREX Working Group has discussed the need to provide very limited scheduled opportunities for general QSO operations in addition to any random times the crew can afford to operate. One or two opportunities per mission would allow hams and nonscheduled school groups to hear and potentially work the Shuttle astronauts on a pre-defined schedule. We will carefully consider this option in the months ahead. Please note, however, that the earliest that this could be accommodated is on the STS-58 mission this summer. We will keep you posted.

Effective and reliable communications is always important in this hobby. I hope the above bridges that gap and helps you better understand the activities that transpired on these two missions and the priorities of the Space Shuttle and SAREX missions. If you have any further questions or comments, please direct them to me at ka3hdo@amsat.org or via my callbook address. I will try to respond to you as best I can. On behalf of the SAREX Working Group, we invite you to continue your pursuit of the ultimate DX contact -- that with a crew member on the Space Shuttle!

73,

Frank H. Bauer, KA3HDO
AMSAT-NA V.P. for Manned Space Programs

/EX
SB SAT @ AMSAT $ANS-135.04
AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 135.04 FROM AMSAT HQ
SILVER SPRING, MD MAY 15, 1993
TO ALL RADIO AMATEURS BT
BID: $ANS-135.04

AMSAT Operations Net Schedule

AMSAT Operations Nets are planned for the following times. Mode B Nets are conducted on AO-13 on a downlink frequency of 145.950 MHz and Mode J/L on a downlink of 435.970 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
23-May-93	0030	B	156	VE2LVC	W9ODI
30-May-93	0000	B	62	N7NQM	W5IU

Any stations with information on current events would be most welcome. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

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Slow Scan Television on AO-13

SSTV sessions will be held on Saturdays and Sundays UTC:

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        Mode J          Downlink 435.980 MHz
        Mode B after J  Downlink 145.960 MHz
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OPS NETS will take priority, look for SSTV activity immediately after the net. SSTVer's are invited to join the Net to make schedules at other times if desired.

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SB SAT @ AMSAT $ANS-135.05
WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 135.05 FROM AMSAT HQ
SILVER SPRING, MD MAY 15, 1993
TO ALL RADIO AMATEURS BT
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Weekly OSCAR Status Reports: 15-MAY-93

AO-13: ATTITUDE CHANGE

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L QST *** AO-13 TRANSPONDER SCHEDULE *** 1993 May 10 - May 31
Mode-B  : MA   0 to MA 130 !     Omnis MA 250 - MA 60
Mode-BS : MA 130 to MA 180 !<- S transponder; B trsp. is ON
Mode-S  : MA 180 to MA 190 !<- S transponder; B trsp. is OFF
Mode-LS : MA 190 to MA 195 !<- S beacon + L transponder
Mode-JL : MA 195 to MA 210 !        Blon/Blat 210/0
Mode-B  : MA 210 to MA 256 !  Move to attitude 120/0, May 31
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Please don't uplink to Mode-B during MA 180-190. Doing so will interfere with Mode-S operations. Mode-S will be ON for nearly 3 hours, from MA 130 to MA 195. New Mode-S stations appear daily. During MA 130-180, Mode-S stations will have to endure the coupling from Mode-B users operating between the downlink passband between 145.880 - 145.920 MHz. Either work between them, use them as test signals or go X-band. From MA 180-190 is Mode-S transponder exclusive (plus Mode-B beacon). MA 190-195 is Mode S beacon (plus Mode-L transponder). [G3RUH/VK5AGR/DB2OS]

FO-20: The FO-20 Ground Control Station, JJ1ZUT, announced that FO-20's operational schedule during the month of May will be as follows:

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    Analog Mode Operation(in UTC):
    May 19  10:20 <---> May 20 10:40
    May 26  10:50 <---> May 27 11:08
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At all other times, expect the digital mode and BBS to be in operation. [JJ1WTK/3]

AO-16: Operating normally and has a number of interesting educational files regarding the WO-18 spectrometer experiment. [WH6I]

LO-19: Operating normally. [WH6I]

UO-22: Operating normally. [WH6I]

KO-23: The KITSAT-OSCAR-23 Bulletin Board System (BBS) has been up-and-down lately. The RAM disk was wiped out and old files were lost. However, recently, the BBS has been up for a few days now and so files are accumulating again. There is a pair of new earth images available for downloading. There have been some questions about the operation of KO-23's receivers, and opinions differ. If you find that one receiver doesn't work, then try the other one. This may have been a software problem, since

it seems to have resolved with software re-start. [WH6I]

W0-18: WO-18 is still getting great pictures from the on-board camera. The spectrometer software has also been uploaded at last. The spectrometer seems to be working well, and either it or the camera can now be selected on command. Software for decoding & analysis of the spectrometer data has reportedly been uploaded onto AO-16 and LO-19. Work is progressing on the improvements and updates to WeberWare. New code for the spacecraft which will allow doubling of video fields is also under consideration. If completed, this would improve the quality of the photos, although it will take longer to collect 100% of the data. [WD8QCN]

RS-10: RK3KPK, the Ground Controller for all of the RS satellites and operator RS3A reports an incredible flurry of DX activity on the RS birds during the past 10 days. RK3KPK reports that he has heard stations from the US, Russia, Europe, Australia, Brazil, and South Africa on the RS birds. RK3KPK uses a 100 watt RF output transmiter into a ground-plane antenna and a 3 element Yagi antenna inorder to receive signals from RS-10. He invites all to use RS-10's special channel with its uplink frequency of 145.850 MHz and a downlink frequency of 29.350 MHz. In a final note from RK3KPK, he also reports that RS-15 will be launched later this year. He added that RS-15 is currently in Moscow and is ready for launch. [RK3KPK @ RK3KP.#MSK.RUS.EU]

MIR: VE3BRO reported that heard one of the cosmonauts calling stations in the US on 16-MAY-1993 on a pass that began at his QTH around 18:42 UTC. The downlink frequency was 145.550 MHz FM. [VE3BRO]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly OSCAR status reports. If you have a favorite OSCAR which you work on a regular basis and would like to contribute to this bulletin, please send your observations to WD0HHU at his CompuServe address of 70524,2272, on INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

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